

REMARKS

Claims 1-16, 18 and 19 are pending in this application.
Claims 17 and 20 are canceled.

The Objection to the Drawings

The drawings are objected to under 35 U.S.C. 1.83(a). In particular, the Office Action states that features recited in Claim 4 and 17, i.e., the "elliptical outer edge facing an inside of the shell and spaced therefrom" was not shown in the drawing. A Replacement Sheet of FIGS. 1 and 2 is appended hereto. The amended FIG. 2 includes numeral 46 for the outer edge of the baffle and shows a clearance between edge 46 and the inner surface 62 of the shell 34. An amendment is made to paragraph [00037] of the specification to refer to FIG. 2. It is respectfully submitted that the modification of FIG. 2 as presented in the Replacement Sheet overcomes the objection.

Additionally, further modifications were made in the Replacement Sheet to correct some clerical errors. In particular, the symbol α in FIG. 2 has been changed to λ to correspond to the description in the specification. Moreover, FIG. 1 is labeled as "prior art".

A further amendment to the drawings is made by including numeral 38 in FIG. 4. Numeral 38 refers to a central pipe, as described in paragraph [00039] of the specification. Numeral 38 had unintentionally been omitted from FIG. 4 and this amended drawing corrects the omission.

It is respectfully submitted that none of these modifications represent the addition of new matter.

The Rejections Under 35 U.S.C. §112

Claims 16-18 are rejected under 35 U.S.C. 112 second paragraph. In particular, the Office Action states that in Claim 16 the recitation of "reinforcing unit selectively coupling the bundle of second fluid carrying pipes" is not supported by the disclosure. Regarding Claim 18, there is no antecedent basis for "the outer elliptical edges. It is respectfully submitted that these informalities are corrected by the amendments to Claims 16 and 18. Reconsideration and withdrawal of the rejection are respectfully requested.

The Rejection of the Claims Under Prior Art

1. Claims 1-3, 16 and 19 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,493,368

("Gronnerud et al."). Gronnerud et al. discloses a helical flow heat exchanger having individually adjustable baffles.

Claim 1 is amended herein to recite that each baffle of applicants' heat exchanger has an apex longitudinally spaced apart from the apex positions of all other baffles. Support for this recitation may be found for example, in FIGS. 3, 4, 6 and 8.

Gronnerud et al. does not disclose or suggest such a feature. For example, referring to FIGS. 1 and 2 of Gronnerud et al., it can be seen that the baffles 7 are grouped in pairs which are connected to central pipe 6 at the same longitudinal position.

It is respectfully submitted that applicants' Claim 1 as amended and all claims depending therefrom are allowable over the Gronnerud et al. reference.

With respect to Claims 16 and 19, these claims have been amended to substantially incorporate the recitations of Claims 17 and 20, respectfully. Claim 17 has been indicated to be allowable if rewritten and no rejection was lodged against Claim 20. Claims 17 and 20 have been canceled in view of this amendment.

Accordingly, reconsideration and withdrawal of the rejection of Claims 1-3, 16 and 19 under 35 U.S.C. §102(b) are respectfully requested.

2. Claim 18 is rejected under 35 U.S.C. §103(a) as being obvious over Gronnerud et al. in view of U.S. Patent No. 2,693,942 ("Guala"). Guala discloses a heat transfer apparatus having plates (6,7) fitted together to form a baffle. Strips 9 attach the baffles in a unitary assembly.

It is respectfully submitted that one skilled in the art would find no suggestion in either of these references for their combination. The Gronnerud et al. baffles are supported by a center pipe to which they are rotatably attached so that their position can be adjusted to various angles of inclination. There would be no need to incorporate strips 9 of Guala to fixedly position the baffles of Gronnerud et al. And, indeed, this would be contraindicated since the Gronnerud baffles would no longer be adjustable.

In any case, Claim 18 depends from Claim 16, which is submitted to be allowable for the reasons stated above. Accordingly, Claim 18 is submitted to be allowable.

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Reconsideration and withdrawal of the rejection of Claim 18 is respectfully requested.

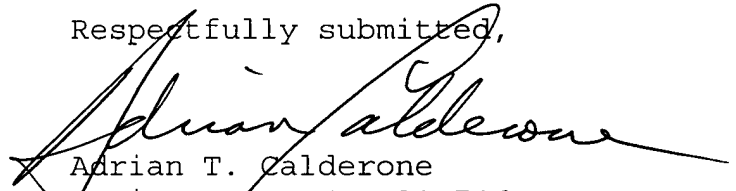
Other Amendments

Claim 7 is amended to specify that the plurality of tie rods extends longitudinally rather than axially.

CONCLUSION

For at least the reasons stated above, all of the pending claims are submitted to be patentable and in condition for allowance, the same being respectfully requested.

Respectfully submitted,


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